

FOR PROFITABLE CONSTRUCTION,
Rethink Scheduling

INEIGHT • SCHEDULE

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The State of Construction Scheduling

Industry-wide, capital construction projects struggle to turn a meaningful profit. Years of planning, collaboration, and expertise net anywhere from 3-5% — if all goes according to plan.

It's not a profit margin that compares favorably with other industries. Manufacturers expect at least 15% return on their efforts. Utilities consistently net at least 10%. The construction industry deserves a similar outcome. Yet, between change orders, labor shortages, limited materials, and unforeseen risks, margin erosion bleeds dollars against the initial bid, making profit harder and harder to achieve.



That's because the plan *reacts* to new events if and when they occur, rather than representing your diligent preparation for the inevitability of change.

Far too often, schedules become a formality—a contractual requirement supervisors feel free to ignore the second the ink's dry. As traditionally created, schedules are best-case scenarios that struggle to account for the real-world circumstances that shape the final outcome. How can construction professionals expect to turn a profit if failure's baked into the schedule from day one?

As traditionally practiced, the critical path method of project management works laterally. From day one to day one thousand and one, schedulers account for the earliest and latest scenarios, find the float, and move forward. The schedule starts with nothing but math and optimism.

But that math doesn't adapt. Optimism doesn't know what it doesn't know. If a new variable upsets the formula, the whole thing comes to a standstill.

Field teams do what's natural in that situation by disregarding the schedule the second it's inconvenient—after all, it doesn't have their experience. The schedule never accounted for the acts of God, Congress, and subcontractors that created this mess—and how could it? Schedules are a train barreling down a fixed track.

But—what if those constraints were easier to anticipate? What if, instead of slamming the brakes every time something fell on the tracks, the conductor had a plan for clearing the tracks in real time? What if, before the train ever left the station, it was equipped with the tools and insights it needed to navigate those obstacles without losing progress?

When schedulers invite owners, engineers, and field experts into the fold to create a constraint-free execution model, the scheduling environment shifts. Suddenly, the schedule is no longer a set of expectations the execution teams fail to meet, and instead becomes a strategic asset, shaping workflows and championing communication between owners, contractors, and teams in the field. It transforms from an anchor pulling the project under and into an engine driving it ahead.

That's transformational scheduling, and it ushers in a better way to build.

WHAT IS TRANSFORMATIONAL SCHEDULING?

Transformational scheduling takes a leap forward from the constraints of traditional scheduling practices and tools. It integrates multiple perspectives and experiences with historical project data to create an accessible, living, iterative plan that adjusts to risk throughout the project lifecycle.

TRANSFORMATIONAL SCHEDULING DELIVERS:

- More accurate plans
- Validation and buy-in from stakeholders
- Support for alternative delivery and contracting methods
- Embedded risk management throughout the project
- Greater business confidence



CHAPTER 1:

Clearing the Bottleneck

A good schedule requires two things: time and expertise. Scheduling experts with both are a rare find.

Far too often, master schedulers get stretched across mega projects, high-profile opportunities, and urgent deliverables. They have the expertise to craft an insightful, reliable schedule but cannot scale their time across more and more projects.

Software is at its best when it extends the expertise of those using it, saves them time, or both. But the software tools historically available for construction schedulers fail in one way or another. On one hand, some tools are inaccessible to all but the most specialized professionals who have accrued hundreds of hours of training. On the other, many tools are inadequate for the demands of capital construction and the complexity of today's delivery models or can only be made to work with laborious or risky workarounds.

The extreme specialization required by complex tools has a significant downside: isolation. Without scalable ways to seek input and validation, specialized schedulers too often work in a silo, resulting in schedules other team members don't understand well enough to trust. Side schedules are often accepted as an undesirable but inevitable result.

When dedicated schedulers are fully occupied, other team members – project managers or estimators, for example – are often tapped to fill in on lower-visibility projects. Lacking training in the complex tools, they turn to less robust software that lacks construction-specific structures and guardrails. Again, side schedules often follow, compounding the challenges of these more light-weight tools.

Schedules shouldn't rely on one person shouldering the weight of a multi-million dollar effort. They should result from collaboration between highly specialized professionals uniting to anticipate obstacles and deliver what's best for the project. Transformational scheduling clears that lonely bottleneck and gives teams their best shot at project certainty.

Transformational scheduling relies on software that makes two highly significant corrections to the shortcomings of older tools. First, it opens communication between roles and invites everyone into the planning process. Specialized contributors in the field – not to mention owners, general contractors, engineers – carry deep knowledge of their business and are frequently overlooked in the planning process. Transformational scheduling invites those perspectives into the planning process, integrating feedback about every phase of the project lifecycle.

Second, the software used in transformational scheduling offers radically greater ease of use. That allows organizations to scale the expertise of their teams by relying on this open, insight-rich approach. By capturing and incorporating the expertise of field execution experts along with the perspective of key stakeholders like owners and project managers, transformational scheduling distributes the full range of relevant expertise across the entire project portfolio. Suddenly, early plans are more accurate, teams have more confidence that every perspective is accounted for, and those scheduling and planning capabilities are further distributed across the team.

THE WORLD CHANGES, BUT CPM STAYS THE SAME

- 1956**
Morgan R. Walker and James E. Kelley Jr. start developing the earliest CPM models for Dupont.
- 1958**
The US Navy compliments CPM with its project management tool, PERT.
- 1966**
CPM has its first in-field exposure in the construction of the World Trade Center Twin Towers.
- 1982**
Autodesk launches AutoCAD 1.0.
- 1983**
Primavera Systems is founded, developing project portfolio management software on a DOS platform.
- 1985**
Microsoft acquires the rights to Project—two years before the launch of Excel.
- 1993**
The World Wide Web opens for general public use.
- 1997**
Glenn Ballard and Greg Howell form the Lean Construction Institute.
- 2016**
The World Economic Forum announces the arrival of the Fourth Industrial Revolution.



CHAPTER 2:

An Era of Collaboration

For nearly seventy years, schedulers worked in isolation – and for most companies, that practice continues today. That isolation creates a silo, separating the scheduler from day-to-day context.

Missing is the compounding knowledge of project experiences, nuances in methods, and hard-won lessons. As a result, the plan they've committed so many thoughtful hours to is already out of date and far from realistic the moment it gets distributed.

And yet, the process continues. Create, attempt, work around, repeat.

Transformational scheduling draws that planning process out of its isolation and incorporates it into the daily operations of real-world construction. When schedules are pulled out of their silos, more hands shape the outcome. As a result, owners, engineers, and field specialists take greater ownership of their overall vision. The plan matters because it's their plan. The ambition reflects their wisdom and expertise. This approach connects the scheduler's CMP mathematics with the contractor's practical in-field knowledge and the owner's market acumen. Now, those specialized contributors can account for practical challenges that isolated schedules may otherwise overlook. They see a final delivery date and trust that that date has considered every challenge.

This approach pays respect to the scheduler's skills while complimenting that expertise with in-field experience and historical project data. By incorporating participant feedback and historical data, schedulers can improve their forecasts to create schedules that reflect the structure of similar projects. Likewise, this allows schedulers to templatize the scheduling process, shortening turn-around times as they draw from what's come before. This process of looking back to move forward enables schedulers to identify potential obstacles in previous work to create a more realistic view of the final outcome. This creation and re-creation can optimize work templates one project at a time, creating a more reliable foundation for future efforts.

Ultimately, transformational scheduling aims to create a living, iterative communication tool that extends through the project's lifecycle. Without modern tools, this level of real-time integration would require a team of dedicated analysts monitoring and managing inputs and distributing that data across the necessary channels. It would be incredibly resource heavy. The advent of cloud-based architecture allows organizations to maintain a single source of truth in real time. So, as one variable changes, every point adjusts accordingly. Project managers can adjust expectations on the fly, and teams downstream can

immediately recognize how that change impacts their work while owners have a realistic view of the current status and long-term outlook.

By elevating scheduling, stakeholders improve the transparency and visibility of any project and improve the trust between owners and contractors. Now, when the contractor says the project will be done on a specific date, owners can see how the schedule came together, why it was sequenced in that way, and how each duration was calculated.

THE COST OF BAD SCHEDULES

Construction firms grind for their 3%. Poor planning, be that a siloed schedule, an unreliable workaround, or an unrealistic timeline, is a key factor in project rework—rework that can cost *upwards of 20% of the contract's value*.¹ By improving those planning processes, teams can streamline communication, identify obstacles earlier, and reduce performance issues.

¹ <https://onekeyresources.milwaukeeetool.com/en/construction-rework>

CHAPTER 3:

Managing Modern Complexity

Capital construction has gotten infinitely more complex over the past 70 years. Every year brings more stakeholders, more regulations, and more challenging projects. Often, modern construction projects result in something that's never existed before. Increasing complexity brings with it an ever more compelling need to assess and manage the associated risk.

How do you assess risk on something that's never existed?
How do you benchmark and estimate a bespoke endeavor?

Every layer of complexity invites new levels of risk. Overcoming that risk requires collaboration. One group of stakeholders cannot account for every variable in a complex system. Schedulers and leaders have to rely on partners to contribute their experiences and cover those blind spots. Through collaboration, transformational scheduling weaves threads of knowledge together, creating a more comprehensive, connected, and proactive approach from initial planning to final delivery. When one thread sags, it relies on the others to hold it in place and help the project retain

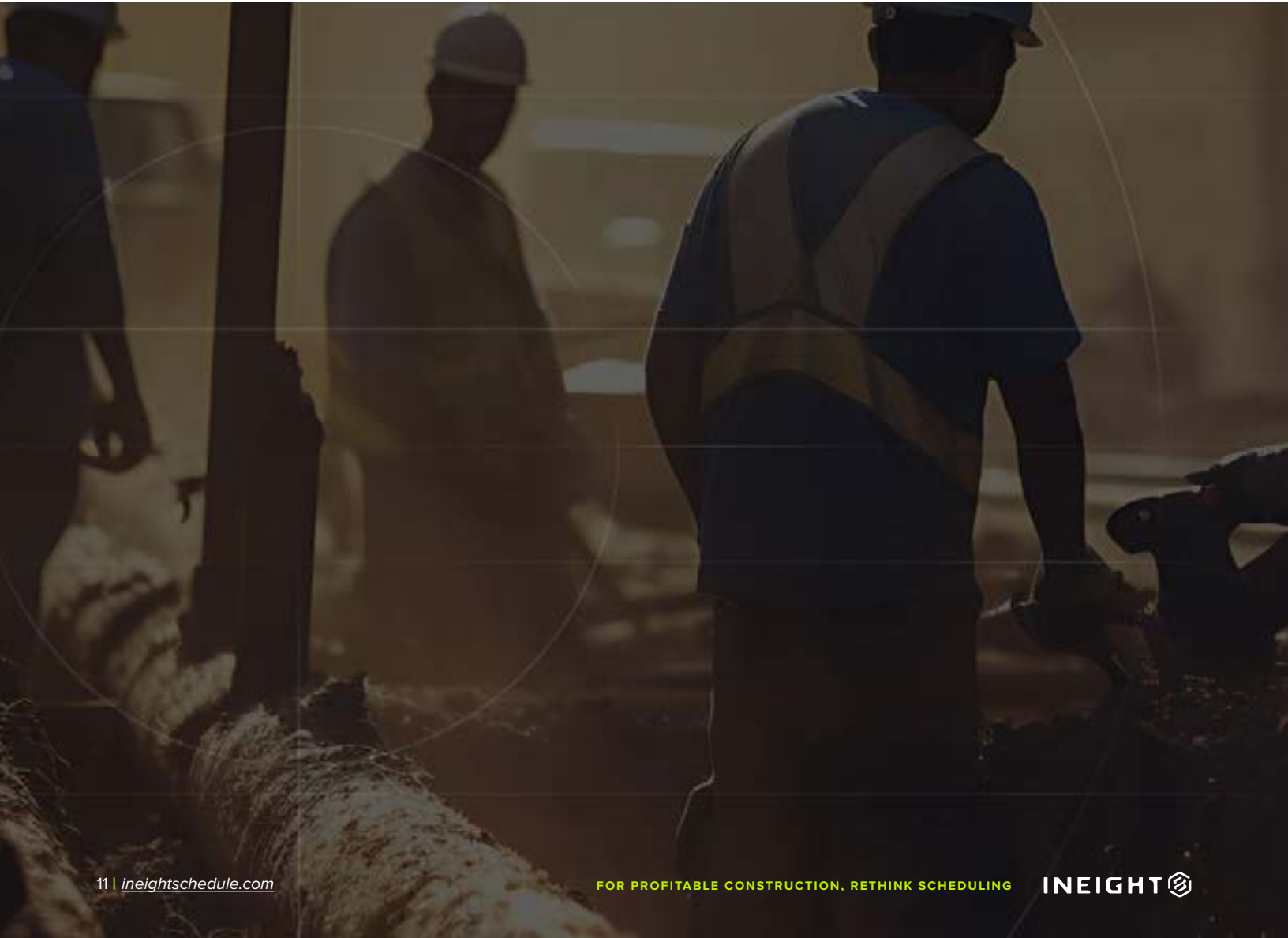
COMPLIMENTING COMPLEXITY

Humans are excellent problem solvers; the humans involved in these complex capital construction challenges, in particular, are brilliant individuals capable of overcoming engineering problems beyond our wildest dreams. But even the bright minds reading this e-book are limited in their ability to process complexity when it's layered in more complexity. Like a maze within a maze, we can only track our steps so far before the volume of information begins to overwhelm us. That's where software comes in. The right tools can take a multi-phase, interdependent CPM model and execute sweeping change in an instant. The right tools can scale the capabilities of one expert across a worldwide network of estimators. Let the computers do the heavy lifting and leave yourself free for essential tasks like critical thinking and collaboration.

its structure and manage risk. This support fortifies the delivery process, empowering teams to pursue new opportunities. Collaboration holds the weight of complexity.

But partners still need a natural place to support that collaboration. No one wants to spend hours fighting with technology—that energy is better spent solving the problem. Transformational scheduling brings a centralized starting point to a complex series of inputs—getting everyone at the same place at the same time, with the same information. That added transparency and accountability makes it easier for parties to share risk.

You have to make big changes to adapt to big challenges. Right now, the traditional approach of stopping and resolving new obstacles mid-build is an expensive and complicated task. However, identifying risks early in the process allows stakeholders to contribute their experiences and adjust the schedule accordingly so that challenges are easier to mitigate downstream. All parties can see and experience the pain points of a risk scenario and are more inclined to remedy those obstacles.



CHAPTER 4:

Transformational Scheduling as a Strategic Mindset

Perhaps the greatest strength of transformational scheduling has little to do with the schedule itself.

As more and more organizations adopt this approach to modern construction, they position themselves to embrace the growing shifts of a digital-first industry. Equipped for the modern age or not, our world has evolved past the analog era. We are in a chapter of change. Across industries, organizations must assess how they manage and apply data and what those insights can do for their business.

Construction is no exception.

Companies that shift their mindsets from traditional CPM scheduling's A to B delivery to a more adaptive, risk-adjusted approach, gain the invaluable ability to reconsider how they operate at scale. Adopting a transformational scheduling model is an organization-wide commitment to transformational thinking. This mindset fosters a culture of innovation, insight,

HOW TO TELL IT'S TIME FOR A CHANGE

The downsides of outdated scheduling take their toll on a business, and as complexity continues to rise, it's urgent to get ahead of that drag on profits. If these challenges apply in your organization, it's time to shift your scheduling approach.

1. Your team has little to no confidence in your existing schedules.
2. Execution teams regularly rely on side schedules to direct their daily work.
3. Your master schedule serves as an administrative necessity and not a foundational part of each project.
4. Your team is consistently misaligned on scope, cost, and delivery timelines.
5. You're wasting time and energy on overcomplicated schedules.
6. You lack a reliable source of truth for project status and percent complete.
7. You're constantly navigating risks that could have been avoided.

and integration and champions change, collaboration, and communication. These are benefits that reach far beyond a project schedule.

Embracing those changes empowers organizations to differentiate themselves in the eyes of customers and top talent. Companies that demonstrate commitment to collaboration and accountability offer owners greater certainty than they've ever experienced. Likewise, owners that seek that collaboration get a better final project with fewer surprises.

By showcasing accessibility and opportunity, companies can present new hires with a more appealing work environment and more opportunities for career growth. Transparency, communication, and innovation will always be attractive qualities for anyone looking in. Those ongoing dialogues continue to build trust with stakeholders, encouraging deeper trust and more profitable business while laying the groundwork for preferred partnerships on future work.

Conclusion

As the ambitions of stakeholders throughout the construction industry continue to meet the Digital Age head-on, scheduling deserves a solution that can keep pace and serve as a keystone feature of tomorrow's builds. Too many hardworking experts put too much time and too many resources into crafting a schedule to see it overlooked. Transformational scheduling puts all the pieces together so that schedulers can see their efforts rewarded. Specialized stakeholders have a seat at the table, organizations can apply their historical data to their future ambitions, and the complex challenges of modern construction finally have a worthy adversary.

For decades, CPM carried the construction space to unfathomable heights. Transformational scheduling refines CPM, streamlining the process to create a smarter, more dynamic outcome. Now, the goal isn't simply getting from A to B; the goal is to anticipate and understand the space in between so that everyone knows what to do when constraints occur.

This is an opportunity to reclaim those margins, build trust between contractors and owners, and pursue a more certain future. Transformational scheduling offers a chance to go beyond those 3-5% profit margins and pursue a future of profitable growth.

It all starts with a plan.



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InEight provides field-tested project management software for the owners, contractors, engineers, and architects building the world around us. Over 575,000 users and more than 850 customers worldwide rely on InEight for realtime insights that help manage risk and keep projects on schedule and under budget across the entire life cycle.

InEight's solutions are built on an open, functionally rich, and modular technology platform that drives seamless integration with other systems.

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